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ABSTRACT

THIS REPORT ON THE ELEMENTARY AND SECONDARY EDUCATION ACT TITLE I PROGRAMS IN PUERTO RICO CONCENTRATES ON IMPROVEMENTS OF SUBSTANDARD CONDITIONS AND OF EDUCATIONAL ACHIEVEMENTS, ON RECREATIONAL AND CULTURAL ENRICHMENT, AND ON TEACHER TRAINING. TOPICS COVERED ARE: EFFECTS OF PRESCHOOL EDUCATION; EFFECTS OF TITLE I PROGRAMS ON GRADES 3, 6, 7, AND 10; NONPUBLIC SCHOOL PARTICIPATION; TEACHER AND TEACHER AIDE TRAINING PROGRAMS; AND, PARENTS AND COMMUNITY INVOLVEMENT. TABLES AND GRAPHS ARE INCLUDED. (KG)

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Commonwealth of Puerto Rico
DEPARTMENT OF EDUCATION
Hato Rey, Puerto Rico

State Annual Evaluation Report
Title I, ESEA

Fiscal Year 1968

UD009710

Submitted by:

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PUERTO RICO ANNUAL EVALUATION REPORT
Fiscal Year 1968
(School Year 1967-1968)

TITLE I, PUBLIC LAW 89-10

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ANNUAL EVALUATION REPORT
Fiscal Year 1967

Introduction:

Title I funds have been used in Puerto Rico since the year 1965-66. Most of the activities thus funded have continued, some with slight changes, a few with major changes, some have been expanded, others have been reduced and others have been entirely dropped. Our main efforts, however, continue to be concentrated on the same major areas or projects, namely:

1. Improvement of substandard conditions
2. Improvement of educational achievement
3. Recreational and cultural enrichment
4. Teacher training

Since the beginning a decision was made that evaluation of Title I would be centered through the Division of Evaluation which would coordinate all evaluation efforts of Title I projects. For the past two years the Division has been undertaking a massive endeavor to gather data which would enable us more effectively to evaluate these projects. These data have gone to make up student, facilities, and personnel files in a computerized "Test and Evaluation" system being developed for the Department of Education under contract with Federal Systems Division of IBM.

Although we are pleased with the amount of progress achieved so far, we feel that still there is a long way to go in order to be able to assess with the greatest degree of accuracy the effects of efforts expended to increase the attainment of our disadvantaged school population. We are still in the process of developing adequate measuring instruments and we need to develop additional techniques for measuring (1) attitudinal aspects of pupil performance, (2) the environmental conditions under which learning occurs and (3) studies in cost effectiveness of educational programs and ancillary services. More adequate procedures for the collection of data need to be established. However, the kind of information already available enables us to reach some preliminary

conclusions as to the general impact the Title I program might have had in our educational system. We cannot be completely certain that the changes described below were caused by the increased federal aid Puerto Rico received under Title I, nevertheless, unable to identify other events which might provide alternative explanations, it seems reasonable to attribute these to the effects of the Title I program.

Among these changes it seems worth mentioning the increase in the number of pupils who are actually receiving more hours of instruction. The number in thousands and percentages of public day school students by school level and type of school organization for the school years 1961-62 to 1967-68 are presented in Table I. As may be seen in the table, the number of elementary public day school pupils getting six hours of instruction is higher for the years 1965-66 to 1967-68 than for years prior to Title I. Although there was a trend of increase in previous years it was not as high as for the above mentioned years. This change is also confirmed when we compare the number of students who received only three hours of instruction during the school years 1961-62 to 1964-65 and 1965-66 to 1967-68. The decrease in the number of students getting only three hours has been due almost entirely to the fourth hour program, one of the activities under Area I of the Title I program. The table also reveals a similar trend in the secondary level.

Table 2 presents cumulative retention rates for various school years. This also shows a favorable change taking place in our educational system during the past two years.

The average number of pupils per classroom teacher has decreased in the elementary school level from an average of 40.3 in the year 1964-65 to an average of 35.9 in the year 1967-68. Although as shown in Table 3 there was a decrease in the average number of pupils per classroom teacher in the years prior to Title I, this trend was even greater during the past two years.

TABLE I

Number (in thousands and Percentages of Public, Day School Pupils in Di
Selected Years 1961-62 to 196

Level and type organization	1961-62		1962-63		1963-64		
	No	%	No.	%	No.	%	
Elementary (1-6)							
Single - 6 hours	128.6	33	137.0	35	146.9	37	
Interlocking - 5 hours	75.6	19	81.9	21	83.6	21	
Double - 4 hours	-	-	-	-	-	-	
Double - 3 hours	184.9	48	171.9	44	164.2	42	
	389.1	100	390.7	100	394.7	100	
Junior High (7-9)							
Single - 6 hours	74.6	59	76.9	60	76.9	61	
Interlocking - 5 hours	52.6	41	50.2	40	49.9	39	
	127.2	100	127.2	100	126.8	100	
Senior High (10-12)							
Single - 6 hours	49.5	75	51.3	70	50.9	64	
Interlocking - 5 hours	16.2	25	21.5	30	28.0	36	
	65.7	100	72.8	100	78.9	100	
All Levels							
Single - 6 hours	252.7	43	265.1	45	274.7	46	
Interlocking - 5 hours	144.4	25	154.0	26	161.0	27	
Double - 4 hours	-	-	-	-	-	-	
Double - 3 hours	184.9	32	171.9	29	164.2	27	
	582.0	100	590.0	100	599.9	100	

Note: Figures correspond to first school month.
Source: Division of Statistics, O.E.P.D. Department of Education Commonwealth o

TABLE I

blic, Day School Pupils in Different Types of Organization by School Level
Selected Years 1961-62 to 1967-68

1962- 63		1963- 64		1964- 65		1965- 66		1966- 67		1967- 68	
	%	No.	%	No.	%	No.	%	No.	%	No.	%
0	35	146.9	37	157.4	39	176.6	43	187.5	45	203.6	47
9	21	83.6	21	90.8	23	95.6	23	104.2	25	104.0	24
	-	-	-	-	-	-7.2	2	34.1	8	30.3	7
9	44	164.2	42	154.3	38	128.2	32	90.8	22	95.3	22
7	100	394.7	100	402.5	100	407.6	100	416.6	100	433.2	100
9	60	76.9	61	78.9	62	80.2	63	82.7	62	96.1	69
2	40	49.9	39	48.4	38	49.2	37	50.2	38	43.2	31
2	100	126.8	100	127.3	100	129.4	100	132.9	100	139.3	100
3	70	50.9	64	49.3	59	51.9	61	56.4	64	62.3	70
5	30	28.0	36	33.7	41	33.8	39	32.3	36	26.7	30
8	100	78.9	100	83.0	100	85.7	100	88.7	100	89.0	100
1	45	274.7	46	285.6	47	308.7	50	326.6	51.1	362.0	55
0	26	161.0	27	172.0	28	178.6	28	186.8	29.3	173.9	26
	-	-	-	-	-	-7.2	1	34.1	5.4	30.3	5
9	29	164.2	27	154.3	25	128.2	21	90.8	14.2	95.3	14
0	100	599.9	100	611.9	100	622.7	100	638.3	100	661.5	100

t of Education Commonwealth of Puerto Rico

Table 2

Cumulative Retention Rates
Public Day School
1st-6th Grades, School Years 1959/60-1967/68

First Grade Enrollment		Sixth Grade Enrollment		Five Years Later
School Year	Number of Pupils*	School Year	Number of Pupils*	% of 1st. Grade Enrollment Five years earlier
1959-60	76,778	1964-65	53,151	69.22
1960-61	78,636	1965-66	55,644	70.76
1961-62	80,805	1966-67	58,059 **	71.85
1962-63	79,299	1967-68	58,711 **	74.03

7th-12th Grades, School Years 1959/60-1967/68

Seventh Grade Enrollment		Twelfth Grade Enrollment		Five Years Earlier
School Year	Number of Pupils	School Year	Number of Pupils*	% of 7th GradeEnrollment Five years earlier
1959-60	52,008	1964-65	22,146	42.58
1960-61	50,285	1965-66	22,516	44.77
1961-62	49,821	1966-67	23,187 **	46.54
1962-63	49,336	1967-68	23,957 **	48.55

1st. to 12th Grades, School Years 1953/54-1967-68

First Grade Enrollment		Twelfth Grade Enrollment		11 Years Later
School Year	Number of Pupils	School Year	Number of Pupils*	% of 1st. Grade Enrollment 11 years Earlier
1953-54	87,052	1964-65	22,146	25.43
1954-55	78,372	1965-66	22,516	29.73
1955-56	75,712	1966-67	23,187 **	30.62
1956-57	74,035	1967-68	23,957 **	32.36

* Enrollment in Sixth Month of School Year (January)
** Enrollment in final Month of School Year (May)

Table 3

AVERAGE NUMBER OF PUPILS PER CLASSROOM TEACHER BY SCHOOL LEVEL

	Level		
	Elementary	Junior High	Senior High
1961-62	43.9	31.5	35.2
1962-63	42.4	30.6	36.0
1963-64	41.5	30.1	35.2
1964-65	40.3	29.5	34.0
1965-66	39.5	29.4	32.3
1966-67	39.2	29.3	30.9
1967-68	35.9	29.9	29.7

ANSWERS TO QUESTIONS 1 - 9

1. Basic State Statistics:

Puerto Rico is considered both a State and Local Educational Agency, therefore, our answer to questions A and B is the same.

A. Total number of operating LEA'S in the State - 1

B. Number of LEA'S participating in Title I - 1

C. Number of Title I programs - 4

D. Unduplicated number of pupils who participated in Title I programs

(1) enrolled in public schools - 670,061

(2) enrolled in non-public schools - 6,987

2. Since Puerto Rico is both State and Local Agency, the SEA Title I staff only includes personnel from the Title I Coordinator Office plus personnel from the Division of Evaluation of the Department of Education.

Visits to Title I activities throughout the island were carried out mainly for program development and evaluation purposes. A breakdown by types of visits and their effect on local projects is presented below:

Number of visits	Proportion	Purpose	Effect
188	22%	Observe and orient the development and implementation of Title I educational activities and services to public and non-public schools.	1. Strengthening the program and solution of several immediate problems. 2. Redefinition of project objectives in behavioral terms. 3. Determination of feasibility of project procedures.
55	6.36%	Assess local personnel in the development of appropriate evaluation designs.	Identification of important variables, criteria and evaluative instruments or techniques in terms of specific project objectives.
578	67%	Gather data for evaluation purposes.	1. Update the special project files already established in the Computer Center. 2. Appraisal of impact of over all Title I Program on the whole school system. 3. Preparation of evaluative reports. 4. Approval of continuing activities was decided on the basis of additional criteria developed.
33	3.81%	Training local personnel in the administration of evaluative instruments.	Collection of more accurate and reliable data for evaluation purposes.
5	.58%	Provide orientation to local supervisors on Title I benefits and improvements.	Proposals for continuing activities were improved.
5	.58%	Organization and execution of a dissemination program.	Five television programs were organized. Brochures and booklets were produced.

3. The following are some of the changes made in our agency during the last three years which have had some effect in improving the quality of Title I projects and insuring proper participation of non-public school children.

Changes in the last three years	Effect
a. Organization of the Office of Educational Planning and Development of the Department of Education.	a. Needs and priorities were determined which helped allocate resources more effectively.
b. Creation of the Academic Advisory Committee.	b. Integration of the programs, activities and services of the Department.
c. Strengthening of the Evaluation Program.	c. Assessment of the effects of individual Title I projects as well as the overall program.
d. Establishment of a computerized information and evaluation system.	d. Availability of statistical and evaluation data which otherwise would be impossible to have.

4 A. In measuring the impact of Title I upon the educational achievement in Puerto Rico, an approach other than a comparison between participants and no-participants has been used, since almost all public pupils are participating in Title I activities to some degree. Title I extension, almost island wide, follows the assumption that limitations which seem to be imposed by socio-economic factors would be overcome and more uniform progress allowed, since the majority of public school children come from the lowest socio-economic level.

An analysis of the data, available as part of the data base in the Puerto Rico Department of Education Information System as well as files maintained in the testing division, is hereby included.

Records of students tested in Spanish reading at the end of the 1966-67 school year were selected and summarized; then a comparable group listed at the end of the 1967-68 school year was chosen. Differences in mean scores between these two samples were analyzed for statistical significance using the PRESS program system.

While Title I projects form a composite of activities, it was expected that their presence would improve performance on standard achievement tests among students having had an additional year of exposure. To test this hypothesis, two samples were drawn from the educational data base and testing-program files using the following criteria:

Title I activities affected all public school children on the island. About 25% of these were included in the data base and testing program files in 1966-67. While all grade levels were tested in Spanish reading achievement in 1966-67, this was not the case of the following year. The selection of records was limited to only those grade levels which were tested in two consecutive years. The 1966-67 sample was thus

reduced to grades 3, 6, 7 and 10. The number of records meeting these criteria was 32,954. The same procedure was followed in selecting the 1967-68 sample. A total of 29,532 records were selected.

Table 4 and Table 5 show the composition of the two samples by grade level, zone, socio-economic level (as determined by data on parental education and occupation through an adaptation of the Hollingshead "Two Factor Index of Social Position"[1]) and sex. They were more or less equivalent in socio-economic composition. The analysis of the data thus obtained has been divided into three main parts, namely:

1. Effect of Pre-school Education-Grade 3
2. Effect of Number of Years Exposed to Title I-Grades 3, 6, 7 and 10
3. Effect of Type of Organization-Grade 3

1. Effect of Pre-School Education-Grade 3

When the results in reading achievement of third graders for the year 1967-68 were analyzed in terms of type of pre-school instruction it was found that the highest mean scores were obtained by those students who have had kindergarten instruction followed by those having had Headstart. The lowest mean scores were obtained by those who did not have Kindergarten or Headstart. Table 6 shows that in all cases the differences in mean scores were highly significant.

When the results obtained by these same students, were compared taking into consideration their socio-economic level, it was found that those students with either Kindergarten or Headstart did better than those with no pre-school education, in all socio-economic levels. However, a close examination of Graph 1 reveals that higher gains are reflected by students in the low, medium low, and medium socio-economic levels having had the opportunity of pre-school instruction. This is consistent with the results obtained the previous year as to the benefits derived by the culturally deprived children from pre-school instruction.

(1) August B. Hollingshead. "Two Factor Index of Social Position", 1965 Yale Station, New Haven, Conn., 1957 (Mimeo. 12 pp.)

2. Effect of Number of Years Exposed to Title I-Grades 3, 6, 7 and 10 Spanish Reading Achievement Test Results

The third graders of 1967-68 earned consistently higher Spanish reading achievement test scores than the third graders of 1966-67, as shown in Table 7. The difference in means between years is statistically significant for both sexes with girls performing considerably better than boys each year.

Third graders in school year 1967-68 also scored higher than those of the previous year at all socio-economic levels, as shown in Table 8. The largest difference in mean scores between years falling at the highest of the 4 socio-economic levels is only significant at 5% and does not dectract from the overallgood results. Title I is aimed at the educationally deprived where differences in means between years are most significant. When the results of urban students were compared to those of rural in Table 9, rural students showed larger gains than urban between school years at all socio-economic levels. Urban and rural students, both had the largest increase at the highest socio-economic level, but with minor significance. The fact that the rural students showed larger gains is a considerable achievement, since more rural than urban students, as per Table 4, were at the lowest socio-economic level. This would tend to indicate that Title I has had the desired effect on the educationally deprived in grade 3.

Among 6th graders, mean scores by sex and socio-economic level were unavailable. Instead, the analysis was concentrated on comparisons between zones, school years, and districts. In all but 1 of the 11 districts tested in 1966-67 there was a significant difference in mean scores between urban and rural as shown in Table 10. In all but 3 of the same districts tested in 1967-68 there was a significant difference in mean scores between urban and rural students. This trend was not observed, however, in a comparison between years. While none of the urban differences were significant

here, 4 districts in the rural zone showed a gain.

While the differences between means by year are consistently higher in 1967-68 than those in 1966-67 for each district, in only 4 of the districts were they statistically significant as shown in Table 11.

Trends similar to those observed among third graders were also observed among seventh graders while among tenth graders the differences in the means between years were not statistically significant. The results are presented in Tables 12 to 15.

3. Effect of Type of Organization-Grade 3

The results in Spanish reading achievement obtained by the third graders in the sample confirms the results obtained last year in which for the first time there was direct objective evidence to verify that there is a close relation between time spent in school and attainment of basic skills. With the exception of students with no pre-school instruction attending interlocking (5 hour) program who did better than those attending single (six hour) program the mean reading scores increased according to the number of hours spent in school. If we disregard the variable of pre-school instruction and analyze the results by hours spent in school, as shown in Table 16, we find that in all cases there were highly significant differences between the means obtained by those having the benefits of more time in school with only one exception - there was no significant difference in the higher mean scores obtained by students attending school five hours and those attending six hours.

The results obtained by these same third graders in English reading achievement presented in Table 17 show the same trend. However, in this case the difference between the mean scores of students attending the six hour pre-gram was statistically significant when compared to those attending the five hour program. Thus the assumption of a close relation between time spent in school and better achievement is once more objectively verified.

TABLE 4

SAMPLE COMPOSITION: NUMBER AND PERCENTAGE OF STUDENTS BY SCHOOL YEAR, GRADE LEVEL, ZONE, AND SOCIO - ECONOMIC LEVEL

School Year	Grade Level	Zone	SOCIO - ECONOMIC LEVEL: Lowest N	Lowest %	Med. Low N	Med. Low %	Medium N	Medium %	Med. High N	Med. High %	All # N	All # %
1966 - 67	3	Urban	2017	44	1623	36	263	6	182	4	4561	100
		Rural	4780	67	1592	22	147	2	69	1	7153	100
		Urban & Rural	6797	58	3215	27	410	4	251	2	11714	100
	6	Urban									3073	100
		Rural	Socio Economic Data for grade 6 not available								4353	100
		Urban & Rural									7426	100
	7	Urban	2648	46	1850	32	516	9	252	4	5773	100
		Rural	1514	60	673	27	82	3	31	1	2523	100
		Urban & Rural	4162	50	2523	30	598	7	283	3	8296	100
	10	Urban	2461	45	1769	32	483	9	196	4	5518	100
											32954	TOTAL
1967 - 68	3	Urban	2230	43	1955	38	299	6	181	4	5173	100
		Rural	4736	65	1649	21	164	2	64	1	7269	100
		Urban & Rural	6966	56	3604	29	463	4	245	2	12436	100
	6	Urban									3202	100
		Rural	Socio- Economic Data for grade 6 not available								4408	100
		Urban & Rural									7610	100
	7	Urban	1742	42	1351	33	382	9	177	4	4173	100
		Rural	1353	60	584	26	65	3	31	1	2220	100
		Urban & Rural	3095	48	1935	30	447	7	208	3	6393	100
	10	Urban	1353	44	952	31	249	8	129	4	3093	100
											29532	TOTAL
											62486	GRAND TOTAL

ALL PERCENTAGES SHOWN ARE ROW PERCENTAGES

THE "ALL" CATEGORY INCLUDES STUDENTS OF THE FOUR SOCIO-ECONOMIC LEVELS SHOWN IN THE TABLE PLUS STUDENTS FOR WHOM NO SOCIO-ECONOMIC DATA WAS AVAILABLE.

TABLE 5

SAMPLE COMPOSITION: NUMBER AND PERCENTAGE OF STUDENTS BY SCHOOL YEAR, GRADE LEVEL, AND SEX

School Year	Grade Level	SEX: Male N - %	SEX: Female N - %	Both N	Both %
1966-67	3	6076 - 52	5638 - 48		11714 - 100
	6	Sex data for grade 6 not available			7426 - 100
	7	4055 - 49	4241 - 51		8296 - 100
	10	2520 - 46	2998 - 54		5518 - 100
				Total	32954
1967-68	3	6495 - 52	5941 - 48		12436 - 100
	6	Sex data for grade 6 not available			7610 - 100
	7	3141 - 49	3252 - 51		6393 - 100
	10	1308 - 42	1785 - 58		3093 - 100
				Total	29532
				Grand Total	62486

All percentages shown are row percentages

TABLE 6

COMPARISON OF READING ACHIEVEMENT BY TYPE OF PRE-SCHOOL INSTRUCTION - GRADE 3, YEAR 1967-68

	Kindergarten vs. Head Start		Difference in means
N	948	1500	
Mean	60.83	56.35	
S.D.	19.10	20.12	4.48**
	Kindergarten vs. No Kinder No Headstart		
N	948	8027	
Mean	60.83	51.53	
S.D.	19.10	19.99	9.30**
	Headstart vs. No Kinder No Headstart		
N	1500	8027	
Mean	56.35	51.53	
S.D.	20.12	19.99	4.82**

**Significant at 1% level

TABLE 7

COMPARISON OF SPANISH READING ACHIEVEMENT BY YEAR AND SEX- GRADE 3

School Year		SEX Male	SEX Female	SEX Both	Difference in Means Between Sexes
1966-67	N	6076	5638	11714	
	Mean	46.13	51.86	48.89	5.73 **
	S.D.	19.05	18.36	18.94	
1967-68	N	6495	5941	12436	
	Mean	49.26	55.13	52.06	5.87 **
	S. D.	20.63	19.37	20.25	
Difference in Means between years		3.13**	3.27**	3.17 **	

** Significant at 1% level

INTERAMERICAN SERIES TEST, LEVEL 2

TABLE 8

COMPARISON OF SPANISH READING ACHIEVEMENT BY YEAR AND SOCIO ECONOMIC LEVEL - GRADE 3

Year		Socio - Economic Level				
		Low	Medium Low	Medium	Medium High	All ∓
1966-67	N	6797	3215	410	251	11714
	Mean	46.44	52.26	56.97	61.88	48.89
	S. D.	18.57	18.78	18.76	17.36	18.94
1967-68	N	6966	3604	463	245	12436
	Mean	49.47	55.49	59.80	66.13	52.06
	S. D.	20.02	19.66	18.48	21.72	20.25
Difference between Means		** 3.03	** 3.23	* 2.83	* 4.25	** 3.17

∓ All includes the students of the four socio-economic levels shown in the table plus those who did not have socio-economic data.

** Significant at 1% level

*Significant at 5% level

Table 9

COMPARISON OF SPANISH READING ACHIEVEMENT BY YEAR, SOC-ECO. LEVEL AND ZONE - GRADE 3

URBAN ZONE

School Year		Socio - Economic Level				
		Low	Med. Low	Medium	Med. High	All
1966-67	N	2017	1623	263	182	4561
	Mean	50.80	56.54	60.03	64.30	54.04
	S D	18.60	18.08	18.35	16.98	18.62
1967-68	N	2230	1955	299	181	5167
	Mean	53.34	59.42	62.31	67.33	56.74
	S D	20.06	18.64	18.07	21.47	19.72
Difference in Means		2.54 **	2.88 **	2.28	3.03	2.70**

RURAL ZONE

		Socio - Economic Level				
		Low	Med. Low	Medium	Med. High	All
1966-67	N	4780	1592	147	69	7153
	Mean	44.59	47.90	51.50	55.49	45.61
	S D	18.25	18.47	18.29	16.82	18.40
1967-68	N	4736	1649	164	64	7269
	Mean	47.65	50.83	55.22	62.77	48.74
	S D	19.75	19.82	18.41	22.24	19.96
Difference in Means		3.06 **	2.93**	3.72	7.28*	3.13**

** Significant at 1% level * Significant at 5% level
INTERAMERICAN SERIES TEST, LEVEL 2

TABLE 10

COMPARISON OF SPANISH READING ACHIEVEMENT BY YEAR, ZONE AND SCHOOL DISTRICT - GRADE 6

Year	School District/Region	Urban Zone N	Urban Zone Mean	Urban Zone S.D.	Rural Zone N	Rural Zone Mean	Rural Zone S.D.	Difference in Means Between Urban & Rural
1966-67	Arecibo-A	538	53.81	19.17	742	48.22	17.61	5.59**
	Ciales-A	116	52.69	16.40	259	44.18	16.22	8.51**
	Vega Alta-A	238	56.41	17.78	188	50.18	16.16	6.23**
	Barranquitas-C	174	49.11	18.24	383	46.26	17.46	2.85**
	Caguas-C	749	59.17	18.84	749	48.75	16.74	10.42**
	Comerío-C	182	49.80	17.16	284	43.44	17.25	7.15**
	Cidra-C	258	46.85	17.78	358	47.08	16.88	-0.23
	Cabo Rojo-M	168	56.60	19.89	287	53.10	16.09	3.50**
	Isabela-M	214	52.93	19.42	394	49.00	17.12	3.93**
	San Germán-M	185	55.38	17.86	269	47.11	17.18	8.27**
	San Sebastián-M	251	58.27	18.46	500	50.38	16.25	7.89**
	TOTAL	3073			4353			
1967-68	Arecibo-A	588	56.00	18.87	732	50.10	17.80	5.90**
	Ciales-A	132	55.30	19.40	259	46.00	16.42	9.30**
	Vega Alta-A	248	57.00	17.80	203	50.90	16.32	6.10**
	Barranquitas-C	138	51.90	17.92	359	46.50	16.23	5.40**
	Caguas-C	899	59.60	18.78	855	51.90	17.70	7.70**
	Comerío-C	206	49.80	16.62	265	45.70	16.14	4.10**
	Cidra-C	256	48.40	17.61	303	47.40	16.11	1.00
	Cabo Rojo-M	156	56.90	19.95	280	55.70	18.29	1.20
	Isabela-M	189	53.10	18.86	304	51.30	18.68	1.80
	San Germán-M	185	54.60	19.45	329	52.00	17.02	2.60**
	San Sebastián-M	205	60.10	18.03	519	54.00	16.63	6.10**
	TOTAL	3202			4408			

**Significant at 1% Level

(CONT. TABLE 10)

Difference in Means between years 1966-67 and 1967-68	School District/Region	Urban Difference	Rural Differences
	Arecibo-A	2.19	1.88*
	Ciales-A	2.61	1.82
	Vega Alta-A	0.59	0.72
	Barranquitas-C	2.79	0.24
	Caguas-C	0.43	3.15**
	Comerío-C	0.79	2.26
	Cidra-C	1.55	0.32
	Cabo Rojo-M	0.30	2.60
	Isabela-M	0.17	2.30
	San Sebastián-M	0.78	4.89**
	San Germán-M	1.83	3.62**

**Significant at 1% Level
*Significant at 5% Level

DEPARTMENT OF EDUCATION TEST, LEVEL 3

TABLE 11

COMPARISON OF SPANISH READING ACHIEVEMENT BY SCHOOL DISTRICT AND YEAR - GRADE 6

School District	Year 1966-67 N	Year 1966-67 Mean	Year 1966-67 S.D.	Year 1967-68 N	Year 1967-68 Mean	Year 1967-68 S.D.	Difference between Means
Arecibo	1280	50.57	18.49	1320	52.70	18.53	2.13**
Ciales	375	46.81	16.75	391	49.10	18.04	2.29
Vega Alta	426	53.66	17.36	451	54.30	17.41	0.64
Barranquitas	497	47.26	17.78	497	48.00	16.89	0.74
Caguas	1498	53.96	18.57	1754	55.85	18.65	1.89**
Cidra	616	46.98	17.27	559	47.90	16.82	0.92
Comerío	466	46.23	17.37	471	47.50	16.73	1.27
Cabo Rojo	455	54.39	17.68	436	56.13	18.91	1.74
Isabela	608	50.38	18.07	493	52.00	18.77	1.62
San Germán	454	50.48	17.93	514	52.90	17.97	2.42**
San Sebastián	751	53.02	17.41	724	55.70	17.26	2.68**
TOTAL	7426			7610			

**Significant at 1% level

TABLE 12

COMPARISON OF SPANISH READING ACHIEVEMENT BY YEAR, ZONE AND SEX - GRADE 7

Zone		Sex: Male 1966-67	Male 1967-68	Female 1966-67	Female 1967-68	All 1966-67	All 1967-68
Urban	N	2819	2033	2954	2140	5773	4173
	Mean	38.67	40.16	40.81	42.50	39.77	41.36
	S. D.	15.36	16.31	15.41	16.04	15.42	16.22
	Difference bet. Means	1.49**		1.69**		1.59**	
Rural	N	1236	1108	1287	1112	2523	2220
	Mean	33.30	35.22	35.99	39.19	34.67	37.21
	S. D.	12.37	13.36	13.49	13.38	13.02	13.51
	Difference bet. Means	1.92**		3.20**		2.54**	
Urban and Rural	N	4055	3141	4241	3252	8296	6393
	Mean	37.03	38.42	39.35	41.37	38.22	39.92
	S. D.	14.72	15.51	15.02	15.26	14.92	15.46
	Difference bet. Means	1.39**		2.02**		1.70**	

** Significant al 1% level
INTERAMERICAN SERIES TEST - LEVEL 4

TABLE 13

COMPARISON OF SPANISH READING ACHIEVEMENT BY YEAR, ZONE AND SOCIO-

Socio - Economic Level

Zone		Low		Medium Low		M
		1966-67	1967-68	1966-67	1967-68	1966-67
	N	2648	1742	1850	1351	516
Urban	Mean	37.28	37.83	41.42	43.22	44.53
	S. D.	14.16	14.41	15.74	16.16	17.09
	Difference bet. Means	0.55		1.80**		
	N	1514	1353	673	584	82
	Mean	33.70	36.31	36.07	38.85	39.05
Rural	S. D.	12.21	13.13	14.01	13.86	15.51
	Difference bet. Means	2.61**		2.78**		
	N	4162	3095	2523	1935	598
Urban and Rural	Mean	35.97	37.16	39.99	41.90	43.78
	S. D.	13.60	13.89	15.48	15.62	16.98
	Difference bet. Means	1.19**		1.91**		

** Significant at 1% level

INTERAMERICAN SERIES TEST - LEVEL 2

TABLE 13

ACHIEVEMENT BY YEAR, ZONE AND SOCIO-ECONOMIC LEVEL - GRADE 7

Socio - Economic Level

Medium Low		Medium		Medium High		All	
1966-67	1967-68	1966-67	1967-68	1966-67	1967-68	1966-67	1967-68
1850	1351	516	382	252	177	5773	4173
41.42	43.22	44.53	47.97	49.19	53.99	39.77	41.36
15.74	16.16	17.09	18.31	16.83	19.16	15.42	16.22
1.80**		3.44**		4.80**		1.59**	
673	584	82	65	31	31	2523	2220
36.07	38.85	39.05	39.82	47.81	50.81	34.67	37.21
14.01	13.86	15.51	14.85	15.61	15.31	13.02	13.51
2.78**		0.77		3.00		2.54**	
2523	1935	598	447	283	208	8296	6393
39.99	41.90	43.78	46.78	49.04	53.51	38.22	39.92
15.48	15.62	16.98	18.07	16.68	18.64	14.92	15.46
1.91**		3.00**		4.47**		1.70**	

TABLE 14

COMPARISON OF SPANISH READING ACHIEVEMENT BY YEAR AND SEX - GRADE 10

SEX

	Male		Female		Both	
	1966-67	1967-68	1966-67	1967-68	1966-67	1967-68
N	2520	1308	2998	1785	5518	3093
Mean	44.57	43.99	44.38	44.80	44.47	44.45
S. D.	15.18	15.73	14.42	15.61	14.77	15.67
Difference bet. Means	0.58		0.42		-0.02	

INTERAMERICAN SERIES - LEVEL 5

TABLE 15

COMPARISON OF SPANISH READING ACHIEVEMENT BY YEAR AND SOCIO-ECONOMIC LEVEL - GRADE 10

Socio - Economic Level

	Low		Medium Low		Medium		Medium High		All	
	1966-67	1967-68	1966-67	1967-68	1966-67	1967-68	1966-67	1967-68	1966-67	1967-68
N	2461	1353	1769	952	483	249	196	129	5518	3093
Mean	42.96	41.16	45.43	46.46	48.37	51.23	52.63	58.09	44.47	44.45
S. D.	14.39	13.65	14.78	16.19	15.52	16.76	16.12	18.82	14.77	15.67
Difference between Means	-1.80**		1.03		2.86*		5.46**		-0.02	

** Significant at 1% level
* Significant at 5% level

INTERAMERICAN SERIES, LEVEL 5

TABLE 16

COMPARISON OF SPANISH READING ACHIEVEMENT BY TYPE OF SCHOOL ORGANIZATION - GRADE 3 - YEAR 1967-68

			5 hours	Differences in Means
		N	2177	
		Mean	54.71	-0.95
		S.D.	19.82	
	6 hours vs.		4 hours	
N	6255	N	940	
Mean	53.76	Mean	48.68	5.08**
S. D.	20.31	S.D.	18.58	
			3 hours	
		N	1906	
		Mean	45.83	7.93**
		S.D.	19.76	
	5 hours vs.		4 hours	
N	2177	N	940	
Mean	54.71	Mean	48.68	6.03**
S.D.	19.82	S.D.	18.58	
			3 hours	
		N	1906	
		Mean	45.83	
		S.D.	19.76	
	4 hours vs.		3 hours	
N	940	N	1906	
Mean	48.68	Mean	45.83	2.85**
S.D.	18.58	S.D.	19.76	

**Significant at 1% level

TABLE 17

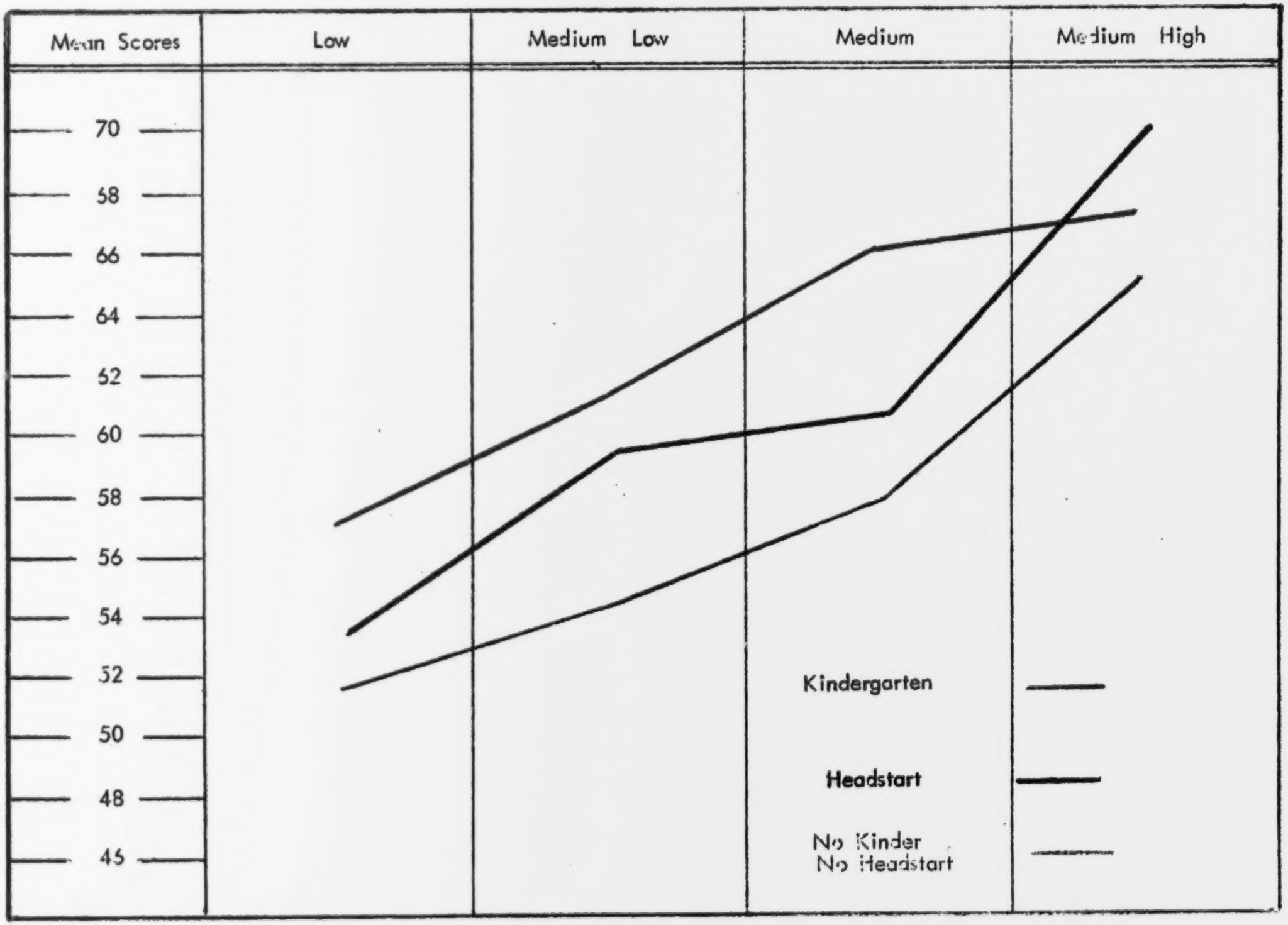
COMPARISON OF ENGLISH READING ACHIEVEMENT BY TYPE OF SCHOOL ORGANIZATION - GRADE 3 - YEAR 1967-68

			5 hours	Difference in Means
	6 hours vs.	N	2118	
N	6687	Mean	79.59	
Mean	80.96	S.D.	25.83	1.37*
S.D.	22.71		4 hours	
		N	850	
		Mean	77.45	
		S.D.	19.47	3.51**
			3 hours	
		N	1826	
		Mean	72.80	
		S.D.	21.25	8.16**
	5 hours vs.		4 hours	
N	2118	N	850	
Mean	79.59	Mean	77.45	
S.D.	25.83	S.D.	19.47	2.14*
			3 hours	
		N	1826	
		Mean	72.80	
		S.D.	21.25	6.79**
	4 hours vs.		3 hours	
N	850	N	1826	
Mean	77.45	Mean	72.80	
S.D.	19.47	S.D.	21.25	4.69**

*Significant at 1% level
**Significant at 5% level

GRAPH 1

COMPARISON OF MEAN SCORES OBTAINED BY THIRD GRADE STUDENTS IN THE TEST OF READING IN SPANISH BY SOCIOECONOMIC LEVEL AND PRE-SCHOOL INSTRUCTION - TITLE I SAMPLE MARCH 1968



4. - B - Common characteristics of those projects which, in our judgement , have been most effective in improving educational achievement in Puerto Rico, are the provisions under these projects for:

   1. increase in actual number of hours of instruction
   2. increased attention to remedial and individualized instruction
   3. increased attention to children of pre-school to primary level
   4. increase in teaching personnel
   5. increased availability of audiovisual aids, books, and other materials and equipment.

4. - C - No evidence available.

5. The Title I program has had some effects on the administrative structure and educational practices in our educational system. Significant among these are the following:

   a. Increased awareness among school people of need for curriculum diversification and adaptation to needs of educationally deprived children. Greater efforts are being made in educational planning so as to develop procedures which will allow the Department to evaluate actual or potential educational tactics (i. e. various combinations of different teaching techniques and teaching equipment, curricula, physical facilities, forms of school organization, personnel specialties and qualifications) upon optimal and maximal educational outputs.

   b. The Information and Evaluation System initially developed to meet the evaluation requirements of Title I projects, is now the central tool in the Department's scheme for planning. This system provides historical information and projections concerning the present and future condi-

tions of pupils, staff personnel, facilities, programs and finances.

c. Massive programs of in-service teacher training have been developed. These programs include training in techniques and special training in specific subject matters (English, Language Arts, Sciences, Mathematics) and other means of improving teaching quality.

d. The expansion and diversification of educational services: curriculum enrichment, regional curriculum development laboratories, local centers for study and supervision for in-service teachers; the pre-school programs; programs offering cultural and recreational experiences, programs for the retarded and the gifted child, programs for recovering high school dropouts.

e. Quantitative improvements through an increase in teaching hours. This involved transportation services, classroom construction, recruitment of substitute teachers and the use of specialist teachers (mostly in English) to offer a fourth hour of instruction daily in schools organized in dobule sessions.

f. Development of programs designed to provide general improvements in teaching conditions, through the purchase of new materials and equipment, innovations in teaching technology, classroom design and organization, etc.

g. Amendments in the regulations for personnel contracting have been introduced.

h. Introduction of the teacher-aide classification in the public school system.

6. Additional Efforts to Help the Disadvantaged.

State funds have been used to augment the following Title I activities:

1. The Fourth Hour Program - to offer daily an additional hour of instruction in elementary schools organized in three hour double sessions. Twenty five additional teaching positions were assigned representing a cost of $81,375.00. This is approximately 10% of the Title I appropriation for this program.

2. The Library program for rural schools - to offer library services to rural deprived children. Ten additional positions of librarians were assigned representing a cost of $32,550.00. This is approximately 10% of the Title I appropriation.

3. The Educational Opportunity Center - to provide educational opportunities for dropout students ages 17-21 - received an additional appropriation of $125,000.00 from State funds. This is 17% of the Title I appropriation.

4. Transportation Program - to offer transportation services for rural children attending urban schools. Additional state funds were provided for transportation representing approximately 53% of the appropriation for this activity under Area I of the Title I program.

7. One of the activities under Project I, The Improvement of Sub Standard Conditions, is the financial aid to private schools for the acquisition of materials and equipment. Eleven private schools with an approximate enrollment of 6,987 students were included. In all of these schools the materials and equipment thus purchased were used as part of their regular teaching program and in some cases for the enrichment of recreational cultural programs.

Visits were planned and realized to these schools to supervise services provided to their deprived children. New services were planned with and among Title I staff and non-public school officials during these visits as well as during interviews held in the Title I Office. These officials also attended meetings for planning and evaluation purposes.

There were no changes in legal interpretations in Puerto Rico as regards financial aid to private schools.

8. Teacher - teacher aide training programs were conducted mainly as part of the activity under Area I which provides for the training and use of teacher aides. To some extent they were also conducted as part of two other programs, the Pre-School Education program and the Team Teaching program.

In general the training programs were organized as workshops or training seminars in which participants got orientation or had the opportunity for practical application regarding the following aspects:

a) individualized instruction

b) independent study skills

c) preparation of educational materials

d) use of audio-visual aids

e) curriculum content

f) the teaching of Art

g) new approaches to teaching

The most common types of activities held were lectures, demonstration classes, discussion group meetings and actual workshop sessions. The number of participants as reported by persons in charge of activities is indicated below:

Teacher Aide Training Program - 242

Pre-School Education Program - 230

Team Teaching Program - 7

9. In the third year of Title I, there has been great progress in the involvement of parents and other members of the community in various activities carried out under our four major Title I projects. Both parents and other members of the community have been involved in varying degree in the planning, coordination, operation, evaluation and dissemination of some of the activities or subprojects carried out under each project. The following tables describe the nature and extent of both parent and community involvement as expressed by leaders of various Title I activities.

Table 18

Extent of Parent and Community Involvement in Title I Program

Programs	Total number of activities	Number of activities in which there was Parent involvement		Community involvement	
			%		%
I. Improvement of sub-standard conditions	24	11	46	10	42
II. Improvement of academic achievement	17	12	70	11	65
III. Curriculum enrichment	13	6	46	4	31
IV. Teacher training	10	3	30	3	30
Total	64	32	50	28	44

Analyzing this table we find that parents have become involved in fifty per cent (50%) of Title I activities and other members of the community in forty-four per cent (44%). Considering that some of the activities developed are of such a nature that parent or community involvement would not be appropriate then we might say that the extent of both parent and community involvement in Title I activities for the year 1967-68 has been extremely satisfactory.

Table 19

NATURE OF PARENT AND COMMUNITY INVOLVEMENT BY TYPE OF INVOLVEMENT

Program	Number of Activities by Type of Involvement									
	Planning		Coordination		Operation		Evaluation		Dissemination	
	Parent	Community	Parent	Community	Parent	Community	Parent	Community	Parent	Community
I. Improvement of sub-standard condition	6	3	9	4	9	5	7	-	9	6
II. Improvement of academic achievement	4	3	6	2	10	8	6	3	11	6
III. Curriculum enrichment	1	-	3	-	5	2	1	-	2	-
IV. Teacher training		2	1	2	1	2	2	3	2	3
	11	8	19	8	25	17	16	6	24	15

As seen in Table 19 the type of parent involvement as well as that of other members of the community has been most noticeable in the operational and dissemination phase of the activities. To a lesser extent both parents and other members of the community have become involved in the planning, coordination and even in the evaluation of various of the Title I activities.

In a questionnaire filled in by all school directores in the 21 school district Title I sample, one hundred and forty two (142) reported that in their opinion parents now participate more in school activities. This number represents 69% of the school directors included in the sample who reported that some kind of Title I activity was being developed in their schools. Approximately 61% reported that other members of the community participated more in school activities than in previous years. (prior to Title I program).

Of these 205 school directors only one (1) reported that there was less parent involvement at present than in previous years; only two (2) reported there was less community involvement.

The following table summarizes the opinion of 205 school directors on parent and community involvement.

Table 20

Question: Have you noticed any changes in parent and community involvement in school activities due to Title I activities?

Degree of involvement	Parents	Community
More participation	142	127
Same participation	30	45
Less participation	1	2
Unable to appreciate change	32	31

In general, parent and community involvement has been most outstanding in the pre-school education programs including the planning, organization and operation of kindergartens and Headstart programs. The following are just a few cases of the many

which we consider outstanding examples of such participation:

1. In the Manuel Corchado School at the Isabela school district the parents assumed full responsibility for the preparation of the area for outdoor activities. They not only contributed with the money for the needed equipment but they actually worked in the preparation of the area and some of them built part of the equipment.
2. Parents in the school at Sierra Bayamón Urbanization and at Public Housing Project Falín Torrench, both at Bayamón school district, have provided most of the equipment for the kindergarten rooms.
3. In the Arecibo school region parents and other members of the community have contributed to a great extent with the furniture and equipment needed for the Home Area in the kindergarten rooms; they have helped in the repairing of school equipment and in the preparation of the facilities for the outdoor activities. They have become also greatly involved in trying to improve attitudes, habits and health of kindergarten and Headstart children.

Outstanding examples of parent and community involvement in other types of Title I activities:

1. At Magueyes Second Unit in the Barceloneta school district the owner of an upholstery shop cooperated actively in the rehabilitation of a group of mentally retarded children. These children, under the direction of their teacher worked in the shop every school day for one hour period. They learned to sand and make minor repairs in furniture and some of then learned certain phases of upholstery work.
2. Parents and other members of the community in the Arecibo School Region have given free transportation to deprived students in order

to enable them to participate of recreational and cultural activities. They have also cooperated in the organization of festivals, exhibitions and shows bringing in refreshments and food, providing the physical facilities and contributing with prizes. This type of cooperation has been almost island wide.

3. In the Mayaguez School region some municipalities have bought buses which they rent at moderate price to the Program of School Transportation thus allowing a greater number of economically deprived students to receive the benefits of this service.
4. The Municipal Government at Las Marías have cooperated with the Centers of Study and Supervision providing the physical facilities for conducting the classes and a warehouse for books and materials.
5. The Juncos Lions Club contributed with money for buying additional books for the Rural Mobile Library in the Juncos school district.
6. Distinguished members of the community have actively participated in some of the cultural activities offered by the Cultural and Recreational Program giving conferences, art shows, recitals, etc. Parents have voluntarily helped the teachers in taking care of groups of students on trips and excursions and preparing refreshments and different kinds of foods for various activities.